

with at least 1 prescription medication. PIP was defined as having a prescription claim for at least one inappropriate medication. **RESULTS:** A total of 23,662 elderly in the cohort (25.8%) had at least one PIP. Of these, 14.1% received prescriptions for 2 medications of concern, and 2.0% for 3 or more. Using the expert panel's categories, 59.2% of the elderly receiving PIP had prescriptions for drugs that should always be avoided, 33.9% for rarely appropriate drugs, and 19.1% for drugs that have some indications but are often misused. NSAIDs (35.7% of subjects) were the most frequently occurring PIP, followed by ticlopidine (17.6%), doxazosin (15.5%) and amiodarone (13.6%). Female, older age, overall number of drugs prescribed, greater number of chronic conditions were factors associated with greater odds of receiving PIP. **CONCLUSIONS:** Via the developed criteria, the study corroborates that PIP among elderly outpatients is a substantial issue in Parma LHU, Italy. Knowledge of the prevalence of PIP and associated factors should gear efforts to develop strategies to reduce PIP in outpatient settings in Italy.

## PHP22

**POLYPHARMACY IS A MAJOR ISSUE IN THE ELDERLY POPULATION: EVIDENCE FROM A POPULATION-BASED STUDY IN PARMA, ITALY**

Abouzaïd S<sup>1</sup>, Del Canale S<sup>2</sup>, Negri G<sup>3</sup>, Donatini A<sup>4</sup>, Maio V<sup>1</sup>

<sup>1</sup>Thomas Jefferson University, Philadelphia, PA, USA, <sup>2</sup>LHU Parma, Montecchiavugolo, Parma, Italy, <sup>3</sup>LHU Parma, Parma, Parma, Italy, <sup>4</sup>LHU Parma, Parma, Italy

**OBJECTIVES:** We sought to 1) estimate the occurrence of polypharmacy, 2) define characteristics of patients most at risk for polypharmacy, and 3) characterize drug classes most commonly involved in polypharmacy in elderly patients in the Local Health Unit (LHU) of Parma, Italy. **METHODS:** We conducted a retrospective analysis of the 2007 Parma LHU automated outpatient prescriptions database. A total of 97,043 patients  $\geq 65$  years (94.2% of the cohort) who had at least one prescription medication were included in the study. Using the World Health Organization's Defined Daily Dose (DDD) to determine the duration of treatment for a given drug, we defined a polypharmacy episode as overlapping treatment with five or more drugs occurring at least one day during the study period. **RESULTS:** A total of 37,789 elderly in the population (38.9%) were exposed to at least one polypharmacy episode. The prevalence of polypharmacy substantially increased with age; 45.5% and 46.8% of individuals, respectively, in the 75–84 age group and 85 years and older were exposed to polypharmacy. For the exposed to polypharmacy, the median number of days of exposure was 55 and 14.8% were exposed for more than 200 days. Compared to the unexposed elderly, subjects exposed to polypharmacy were older, were prevalently male, and had a greater number of chronic conditions. Cardiovascular, gastrointestinal and metabolism, and blood medications were most commonly involved in polypharmacy. **CONCLUSIONS:** Polypharmacy is widespread among the elderly. LHU managers should develop educational activities to make general practitioners aware of the magnitude of polypharmacy phenomenon among their elderly patients. In addition, LHU and clinicians should jointly identify strategies to closely monitoring elderly patients more likely to be exposed to polypharmacy.

## PHP23

**DRUG USE AND EXPENDITURES FOR PART D ENROLLED SENIORS WHO REACHED THE COVERAGE GAP IN 2007**

Gadkari AS, Mott DA, Thorpe J

University of Wisconsin-Madison, Madison, WI, USA

**OBJECTIVES:** 1) To describe how many Medicare Part D enrolled seniors without Low Income Subsidy (LIS) reached the doughnut hole (coverage gap) in 2007, when they reached the doughnut hole, and how long they stayed in it. 2) To compare drug use and expenditures between Part D enrolled seniors without LIS who reached the doughnut hole and those who did not. **METHODS:** A retrospective, descriptive study design was used for the study. Data were extracted from the claims database of a supermarket pharmacy chain in Virginia. Study population was identified using the following selection criteria: age 65 as of January 1, 2007, at least one prescription fill at the participating pharmacy chain between January 1 to December 31, 2007, enrollment in a Medicare Part D plan throughout 2007, and no LIS in 2007. Whether or not a person had reached doughnut hole was determined at the patient-level for each month based on the cumulative total drug spending in that month. Descriptive statistics were used for the first objective. T-tests were used to compare seniors who reached the doughnut hole and those that did not. **RESULTS:** Just below 14% of Part D enrolled seniors without LIS reached the doughnut hole in 2007, of which, about 15% reached the catastrophic coverage. Part D enrolled seniors who reached the doughnut hole had significantly higher drug use, expenditures, and proportion of brand medication fills as compared to seniors that did not reach the doughnut hole. **CONCLUSIONS:** A relatively low proportion, but vulnerable population of Part D enrolled seniors without LIS reached the doughnut hole in 2007. Seniors who reached the doughnut hole had a significantly lower proportion of generic medication fills, suggesting that there is an opportunity to delay or even avoid the doughnut hole for some seniors by switching to lower-cost generics.

## PHP24

**COST SAVINGS ASSOCIATED WITH FILLING A THREE-MONTH SUPPLY OF PRESCRIPTION MEDICINES**

Rabbani A, Alexander GC

University of Chicago, Chicago, IL, USA

**OBJECTIVES:** To measure the difference in out-of-pocket and total costs among subjects receiving different quantities of the same prescription drug used to treat a

chronic condition and to examine patient and health system characteristics associated with the use of a three-month supply. **METHODS:** We pooled data from the 2000–2005 Medical Expenditure Panel Survey, a nationally representative survey of the U.S. non-institutionalized civilian population, to compare prescription drug expenditures for medicines dispensed as both three-month and one-month supplies. Mean monthly out-of-pocket and total costs were measured as the main outcomes and expressed in 2005 dollars. Logistic regression was used to model correlates associated with three-month use. **RESULTS:** Forty-four percent of prescriptions examined were dispensed as three-month supplies. The average adjusted monthly total and out-of-pocket costs for a 1-month supply were \$42.72 (95% confidence interval [CI] \$42.01–\$43.42) and \$20.44 (CI \$19.99–\$20.89) while the corresponding monthly costs for a 3-month supply were \$37.95 (CI \$37.26–\$38.64) and \$15.10 (CI \$14.68–\$15.53), representing a 29% decrease in out-of-pocket costs and a 18% decrease in total prescription costs through the use of a three-month rather than a one-month supply. Eighty percent of the people saved some positive amount from a three-month supply and there was considerable variation in the amount saved. There were no marked differences in the characteristics of individuals using 3-month vs. 1-month supplies. **CONCLUSIONS:** Although such opportunities are not universally available, these findings quantify the cost-savings that patients in the United States can achieve through filling larger quantities of a prescription for a chronic condition. Many patients are burdened by prescription costs, and patients, providers, and policy-makers may attempt to reduce these costs by substituting three-month for one-month supplies of medicines.

## PHP26

**THE IMPACT OF MEDICARE PART D ON MEDICARE-MEDICAID DUAL-ELIGIBLE BENEFICIARIES' PRESCRIPTION UTILIZATION AND EXPENDITURES**

Basu A, Yin W, Alexander GC

University of Chicago, Chicago, IL, USA

**OBJECTIVES:** The Part D drug benefit, implemented on January 1, 2006, reflected a significant change in prescription drug coverage for over six million beneficiaries dually eligible for Medicare and Medicaid. We examined the effect of Part D on dual eligibles' prescription drug usage, out-of-pocket costs, and total drug expenditures. **METHODS:** We selected a random sample of unique pharmacy customers of a national retail pharmacy chain who filled at least one prescription during both 2005 and 2006. For each subject, we obtained claims for every prescription filled between January 1, 2005 and April 31, 2007. We used generalized estimating equations (GEE) to compare the experience of a "treatment" group (dual-eligibles between 65–78 years of age on January 1, 2005) with that of a "control" group (near-elderly Medicaid patients between 60–63 years of age who had continuous drug coverage through Medicaid pre- and post-Part D) during the first 18 months after Part D implementation. **RESULTS:** Expenditures for the treatment and control groups tracked each other closely in the pre-Part D period. Immediately following the implementation of Part D, expenditures for both groups decreased and then leveled off. There were no significant changes in trends in dual-eligibles' out-of-pocket expenditures, total monthly expenditures, pill-days, or total number of prescriptions due to Part-D. **CONCLUSIONS:** Part D represented a policy change of enormous proportions, and there was considerable concern about the impact of the transition on dual eligibles. Many of these challenges were anticipated, and efforts by numerous stakeholders were made to address those that weren't anticipated. We find no evidence that Part D adversely affected pharmaceutical utilization or out-of-pocket expenditures for dual eligibles during the transition period, nor during the 18 months subsequent to Part D implementation.

## PHP27

**OPTIMIZING THE USE OF MEDICATION IN THE INTRAVENOUS COMPOUND CENTER OF THE CMNO**

Lomeli García M<sup>1</sup>, Zapata L<sup>2</sup>

<sup>1</sup>CMNO, Guadalajara, Jalisco, Mexico, <sup>2</sup>Guia Mark, Mexico, DF, Mexico

**OBJECTIVES:** The preparation of intravenous compounds usually involves the use of high cost drugs, hence it is important to optimize the available resources in order to sustain the service without detriment in the quality offered to patients. The objective of this study was to quantify and document the savings reached through waste reduction and the reuse of intravenous compounds returned to the mix center unaltered, maintaining their sterility, in compliance with quality requirements, within their life span, and as long as the medical prescriptions were equivalents. **METHODS:** During 2006, through the daily registration of preparations in the compound center of the CMNO, a monthly analysis was carried out, considering the number of intravenous compounds prepared and returned, as well as the reason for this latter action; their final destination; and the percentage of preparation remnants to be disposed of. The data collected was tabulated and charted to determine monthly averages of each group, with the objective of identifying trends, if any. **RESULTS:** During the year a total of 25,154 intravenous compounds were prepared, of which 404 (1.6%) were returned, 214 (0.85%) of these were reused and 190 (0.76%) were disposed of. On a monthly average from total compounds prepared: 1.64% are returned, 0.87% are reused and 0.77% are disposed of. **CONCLUSIONS:** There are two ways to maximize the economy in the use of resources and medication: the first is to use the content of each drug vial to its maximum, thus reducing remnants to about 1% a month; the second is to optimize the intravenous compound units, in the compound center, that for different reasons are not administered to patients, having only to dispose of 0.76% of compounds prepared.